Hisense

USE AND INSTALLATION INSTRUCTIONS

Thank you very much for purchasing this Air Conditioner. Please read this **use and installation instructions** carefully before installing and using this appliance and keep this manual for future reference.

INSTALLATION MANUAL

Outdoor Unit:
AMW2-20U4SNC1
AMW2-16U4SGC1
AMW2-20U4SZD1
AMW2-16U4SGD1

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1.THE FOLLOWING SHOULD ALWAYS BE OBSERVED FOR SAFETY

• Please provide an exclusive circuit for the air conditioner and make sure that no other electrical appliances are connected to it.

·Be sure to read <THE FOLLOWING SHOULD ALWAYS BE OBSERVED FOR SAFETY> before installing the air conditioner.

·Be sure to observe the caution specified here as they include important items related with safety.

·The indications and meanings are as follows.

⚠ WARNING: Could lead to death, serious injury, etc.

⚠ CAUTION: Could lead to serious injury in particular environments when operated incorrectly.

·After reading this manual, be sure to keep it together with the INSTRUCTION MANUAL in a handy place on the customer's site.

⚠ WARNING

- **Dot not install the unit by yourself(customer).**
  Incomplete installation could cause injury due to fire, electric shock, the unit falling or leakage of water. Consult the dealer from whom you purchased the unit or special installer.
- **Install the unit securely in a place which can bear the weight of the unit.**
  When installed in an insufficient strong place, the unit could fall and cause injury.
- **Use the specified wires to connect the indoor and outdoor units securely and attach the wires firmly to the terminal block connecting sections so that the stress of the wires is not applied to the sections.**
  Incomplete connecting and fixing could cause fire.
- **Do not use intermediate connection of the power cord or the extension cord and do not connect many devices to one AC outlet.**
  It could cause a fire or an electric shock due to defective contact, defective insulation ,exceeding the permissible current, etc.
- **Check that the refrigerant gas does not leak after installation has completed.**
  If refrigerant gas leaks indoors, and comes into contact with the fire of a fan heater, space heater, stove, etc., harmful substances will be generated.
- **Perform the installation securely referring to the installation manual.**
  Incomplete installation could cause a personal injury due to fire, electric shock, the unit falling or leakage of water.
- Perform electrical work according to the installation manual and be sure to use an exclusive circuit.
  If the capacity of the power circuit is insufficient or there is insufficient electrical work ,it could result in a fire or an electric shock
- **Attach the electrical cover to the indoor unit and the service panel to the outdoor unit securely.**
  If the electrical cover in the indoor unit and/or the service panel in the outdoor unit are not attached securely, it could result in

a fire or an electric shock due to dust water, etc.

- **Be sure to cut off the main power in case of setting up the indoor electronic control P. C. Board or wiring works.**
  It could cause an electric shock.
- **The appliance shall be installed in accordance with national wiring regulations.**
- **When installing or relocating the unit, make sure that no substance other than the specified refrigerant(R410A) enters the refrigerant circuit.**
  Any presence of foreign substance such as air can cause abnormal pressure rise or an explosion.

⚠ CAUTION

- **Perform earthing.**
  Do not connect the earth wire to a gas pipe, water pipe, lightning rod or telephone earth wire. Defective earthing could cause an electric shock.
- **Do not install the unit in a place where an inflammable gas leaks.**
  If gas leaks and accumulates in the area surrounding the unit, it could cause an explosion.
- **Fasten a flare nut with torque wrench as specified in this manual.**
  When fastened too tight, a flare nut may break after a long period and cause a leakage of refrigerant.
- **Install an earth leakage breaker depending on the installation place(where it is humid).**
  If a earth leakage breaker is not installed, it could cause an electric shock.
- **Check that the refrigerant gas does not leak after installation has completed.**
  If refrigerant gas leaks indoors, and comes into contact with the fire of a fan heater, space heater, stove, etc., harmful substances will be generated.
- **Perform the drainage/piping work securely according to the installation manual.**
  If there is a defect in the drainage/piping work, water could drop from the unit and household goods could be wet and damaged..

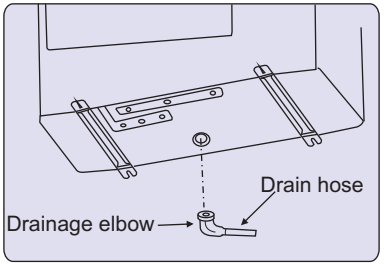
2.INSTALLATION DIAGRAM&ACCESSORIES

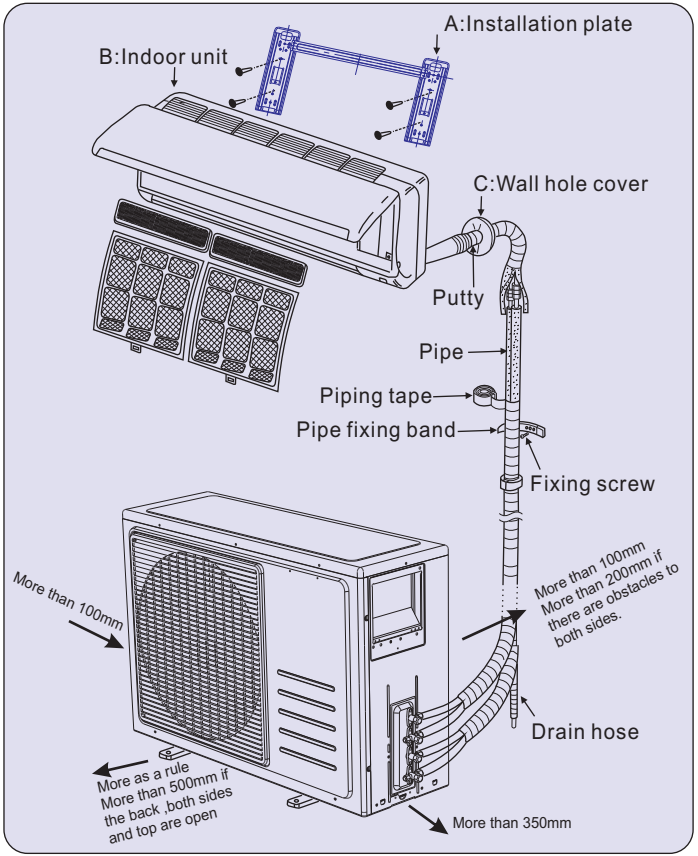
DRAIN PIPING FOR OUTDOOR UNIT

·Provide drain piping before indoor and outdoor connection.
(It will be hard to install drain socket ,if indoor unit becomes immovable.)

·Connect the drain hose(obtainable at a store ,inside diameter:15mm) as shown in the figure for drainage.

Note:
Do not use the drain elbow in the cold region. Drain may freeze and it makes the fan stop.





3.SELECTING THE INSTALLATION LOCATION

OUTDOOR UNIT

- Where it is not exposed to strong wind.
- Where airflow is good and dustless.
- Where it is not exposed to rain and direct sunshine.
- Where neighbours are not annoyed by operation sound or hot air.
- Where rigid wall or support is available to prevent the increase of operation sound or vibration.
- Where there is no risk of combustible gas leakage.
- Where it is at least 3m away from the antenna of TV set or radio. An amplifier may be required for the affected device.
- Install the unit horizontally.
- Please install it in an area not affected by snowfall or blowing snow. In areas with heavy snow, please install a canopy, a pedestal and/or some baffle boards.

4.OUTDOOR UNIT INSTALLATION

⚠ CAUTION

Avoid the following places for installation where air conditioner trouble is liable to occur.

- ***Where there is much machine oil.***
- ***Salty places such as seaside.***
- ***Where sulfide gas is generated such as a hot spring.***
- ***Where there is high-frequency or wireless equipment.***

Note:

When operating the air conditioner in low outside temperature, be sure to follow the instruction describe below.

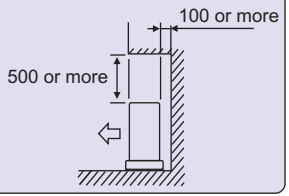
- ***Never install the outdoor unit in a place where its air inlet/outlet side may be exposed directly to wind.***
- ***To prevent exposure to wind, install the outdoor unit with its air inlet side facing the wall.***
- ***To prevent exposure to wind, it is recommended to install a baffle board on the air outlet side of the outdoor unit.***

4-1 FREE SPACE REQUIRED AROUND OUTDOOR UNIT(Unit:mm)

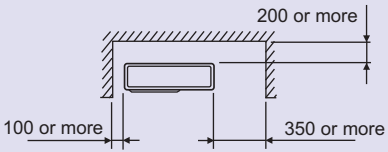
Obstacles

When there is an obstacle around the outdoor unit, it does not matter if the position of the obstacle as shown in the figures below.

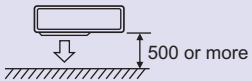
(1).Obstacle over the top side.



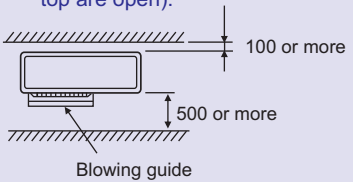
(2).Obstacle in three direction(bu top side is open) .



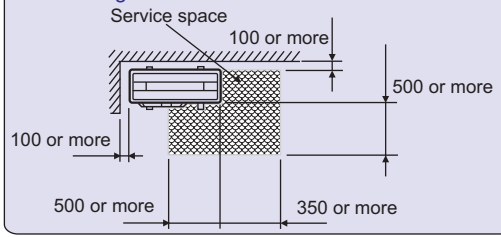
(3).Obstacle on front(blowing) side only. In this case, the rear, both side and top should be open.



(4).Obstacle on front and rear side only. The unit can be used by attaching an optional outdoor blowing guide(but both sides and top are open).

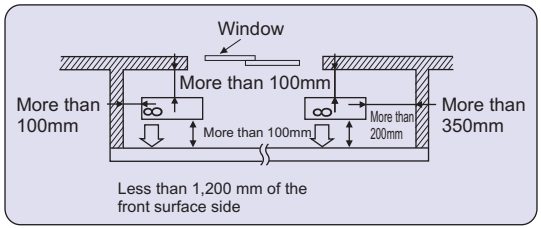


(5).Service space
Keep the service space as shown in the figure below for maintenance



- *When installing the unit in an area that is enclosed on four sides such as a verandah, be sure to leave move than 200mm behind the unit as shown.*
- *When there is a lack of airflow or there is a possibility of becoming short cycle, install an outlet guide and make sure there is enough space behind the rear side of the air inlet.*

NOTE:
Make sure not to install several outdoor units sideways next to each other.



4-2 INSTALLING THE UNIT

- Be sure to fix the unit`s legs with bolts when installing it.
- Be sure to install the unit firmly to ensure that it does not fall by earthquake or gust.

4-3 MOUNTING ARRANGEMENT OF DRAIN SOCKET

Please perform the drain piping work only when draining from one place.

⚠ CAUTION

Do not use drain socket and drain cap in the cold region. Drain may freeze and it makes the fan stop.

4-4 OUTDOOR WIRE CONNECTION AND OUTDOOR POWER SUPPLY CORD CONNECTION

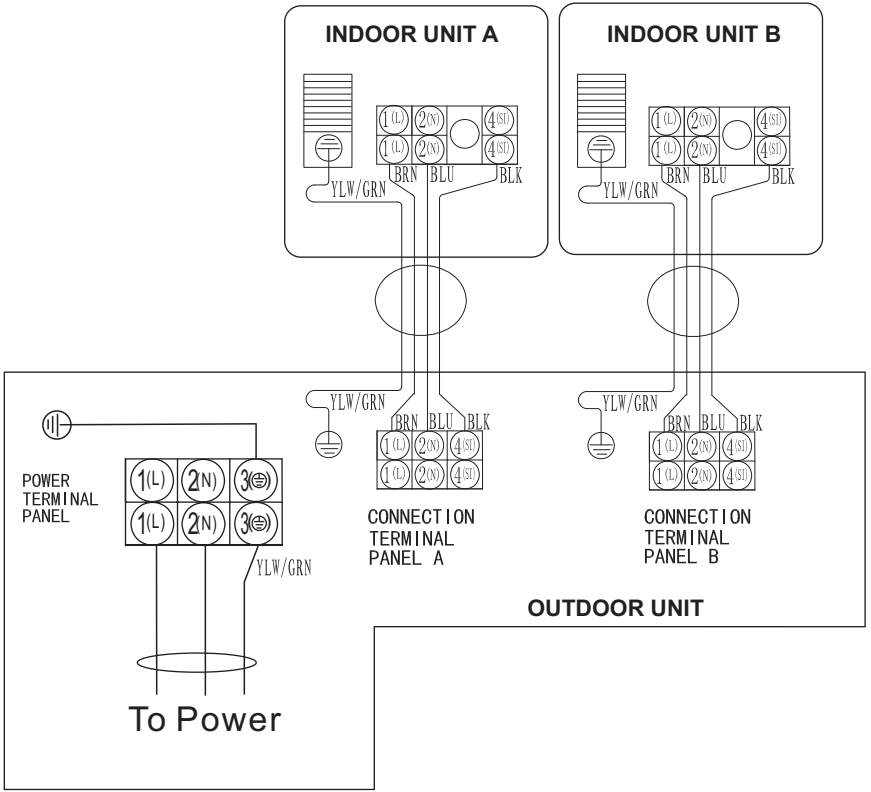
- Be sure to lead in the power supply cord to the air conditioner in accordance with the specification tables below and ``Technical Standards for Electrical Installation``.
- Be sure to use special circuits for room air conditioner.
- Connect to the power switch which has a gap of 3mm or more then open to interrupt the source power phase.
- When the power switch is shut off, it must interrupt all phases.
  Input capacity Main switch/Fuse:20A

Power supply cord specification	Cable 3-core 2.5mm^2, in conformity with Design 245 IEC 57.
Indoor and outdoor connecting wire specification	Cable 4-core 0.75mm^2, in conformity with Design 245 IEC 57.

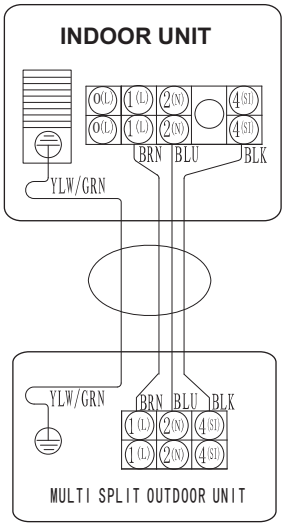
⚠ CAUTION

Attach an earth leakage breaker according to your installation location. If any breaker is not attached, it may cause a risk of electric shock.

4-5 ELECTRICAL WIRING DIAGRAM

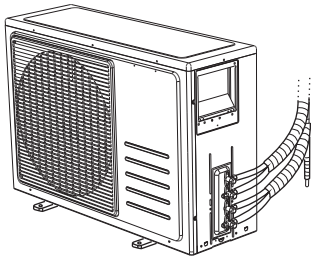


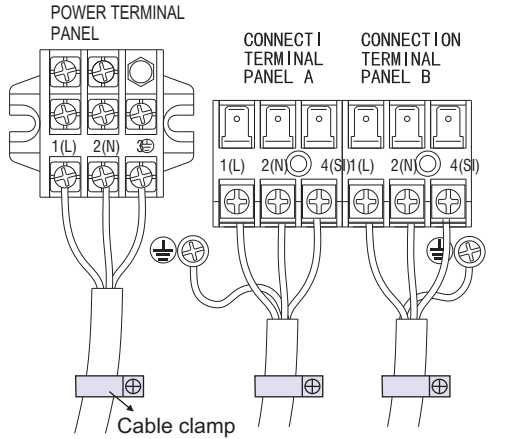
NOTE: For multi split and one for one common indoor unit the wiring diagram.



⚠ WARNING

Be sure to comply with ``Technical Standards for Electrical Installation``, follow this manual and use special circuits for electrical work. If there is a lack of circuit capacity or some deficiency in installation, it may cause a risk of electric shock. Overcurrent might be produced may include DC substances. Be careful to choose the correct type of overcurrent protection switch.





1.Remove the screw of terminal cover.
2.Connect the wire and power supply cable to the terminal block.
3.Replace the terminal cover securely.

⚠ WARNING

-Be sure to attach the valve cover of the outdoor unit securely, otherwise it may result in a fire or an electric shock from dust or water.

-Use the indoor/outdoor unit connecting wire that meets the Standards to connect the indoor and outdoor units and fix the wire to the terminal block securely so that no external force is conveyed to the connecting section of the terminal block. Incomplete connections or fixing of the wire could result in a fire.

-Be sure to attach the terminal block cover on both indoor and outdoor units. If the terminal block cover is incorrectly attached, it may cause a risk of fire or electric shock due to dust or water penetration.

-Be sure to use the power cord which type is more than 20A, otherwise it may result in a fire.

5. INDOOR/OUTDOOR UNITS CONNECTION FINISHING AND TEST RUN

5-1 FLARED CONNECTION

PIPE LENGTH AND HEIGHT DIFFERENCE

LIMITS	TYPE
Pipe length per indoor unit	20m*
Total pipe length for multi-system	40m
Height difference(I.D ~ O.D)	10m
Height difference(I.D ~ I.D)	7.5m

***Do your best to reduce the pipe length. Long pipe may cause capacity of the indoor unit incline.**

Refrigerant adjustment: If total pipe length exceeds 15m, additional refrigerant (R410A) change is required.(The outdoor unit is charged with refrigerant for total pipe length up to 15m.)

PIPE LENGTH AND HEIGHT DIFFERENCE

Pipe length	Up to 15m	No additional charge is required
	Exceeding 15m	Additional charge is required.
Refrigerant to be added	15g/m×(refrigerant piping length(m)-15)	

PIPE SIZE

If you use commercially available copper, use the following table for specifications.

Valve size for outdoor unit			Wall thickness	Insulation thickness
UNIT A	Liquid pipe	Φ6.35mm	0.8mm	8mm
	Gas pipe	φ9.52mm	0.8mm	8mm
UNIT B	Liquid pipe	Φ6.35mm	0.8mm	8mm
	Gas pipe	φ9.52mm	0.8mm	8mm

⚠ CAUTION

Be sure to use the insulation of specified thickness. Excessive thickness may cause incorrect installation of indoor unit and lack of thickness may cause dew drippage.

5-2 FLARING WORK

Main cause of gas leakage is defect in flaring work. Perform flaring work correctly in the following procedure.

1.Pipe cutting

- Cut the cooper pipe correctly with pipe cutter.

2.Burrs removal

- Completely remove all burrs from the cut cross section of the pipe.
- Put the end of the copper pipe downward to prevent burrs from dropping in the pipe.

3.Putting nut on

- Remove flare nuts attached to indoor and outdoor units, then put them on pipe having completed burr removal.
  (Not possible to put them on after flaring work).
- Flare nut for R410A pipe may differ from R22 pipe depending on the diameter of pipe.

4.Flaring work

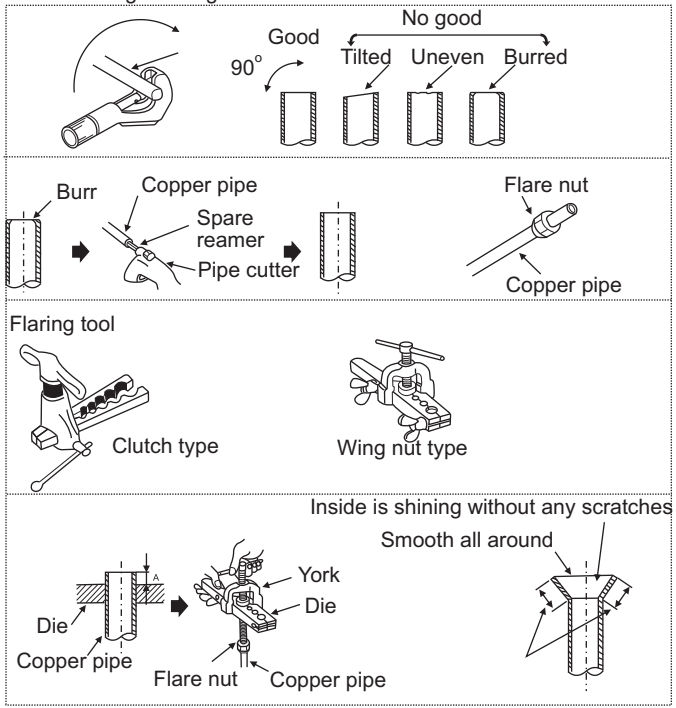
- Perform flaring work using flaring tool as shown below.

Outsdie diameter	A(mm)		
	Flare tool for R410A clutch type	Conventional flare tool	
		Clutch type	Wing nut type
Φ6.35mm	0 to 0.5	1.0 to 1.5	1.5 to 2.0
Φ9.52mm	0 to 0.5	1.0 to 1.5	1.5 to 2.0
Φ12.7mm	0 to 0.5	1.0 to 1.5	2.0 to 2.5
Φ15.88mm	0 to 0.5	1.0 to 1.5	--

Firmly hold copper pipe in a die in the dimension shown in the table above.

5.Check

- Compare the flared work with the figure below.
- If flare is noted to be defective, cut off the flared section and perform flaring work again.



5-3. PIPE CONNECTION

Note:

Fasten a flare nut with a torque wrench as specified in the table below. When fastened too tight, a flare nut may be broken after a long period and cause a leakage of refrigerant.

1.Indoor unit connection

- Connect both liquid pipe and gas pipe to indoor unit.
  -Apply a thin coat of refrigeration oil to the seat surface of pipe.
  -For connection, align the center of both pipe and union, then tighten the first 3 to 4 turns in flare nut by hand.
  -For tightening the union part of the indoor unit side, use the table below as a standard and tighten the flare nut with two wrenched. Excessive tightening damages the flared section.

Pipe diameter	Tightening torque	
	N • m	Kgf • cm
Φ6.35mm	13.7 to 17.7	140 to 180
Φ9.52mm	34.3 to 41.2	350 to 420
Φ12.7mm	49.0 to 56.4	500 to 575
Φ15.88mm	73.5 to 78.4	750 to 800

2.Outdoor unit connection

- Connect pipe to the pipe joint part of the stop valve in the same method as the indoor unit.
  -For tightening, use the same tightening torque applied for indoor unit and tighten the flare nut with torque wrench or spanner.

INSULATION AND TAPING

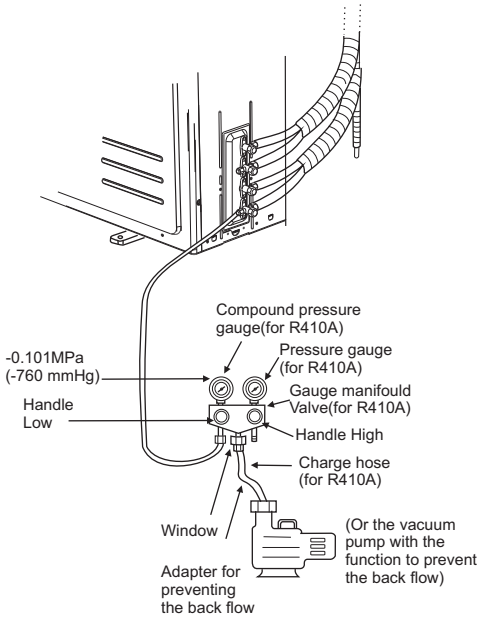
- Cover piping joints with pipe cover.
- For outdoor unit side, surely insulate every piping including valves.
- Using piping tape, apply taping starting from the entry of outdoor unit.
  -Fix the end of piping tape with adhesive tape.
  -When piping has to be arranged through above ceiling, closet or area where temperature and humidity are high, wind addtional commercially sold insulation for prevention of condensation.

5-4. PURGING PROCEDURES · LEAK TEST

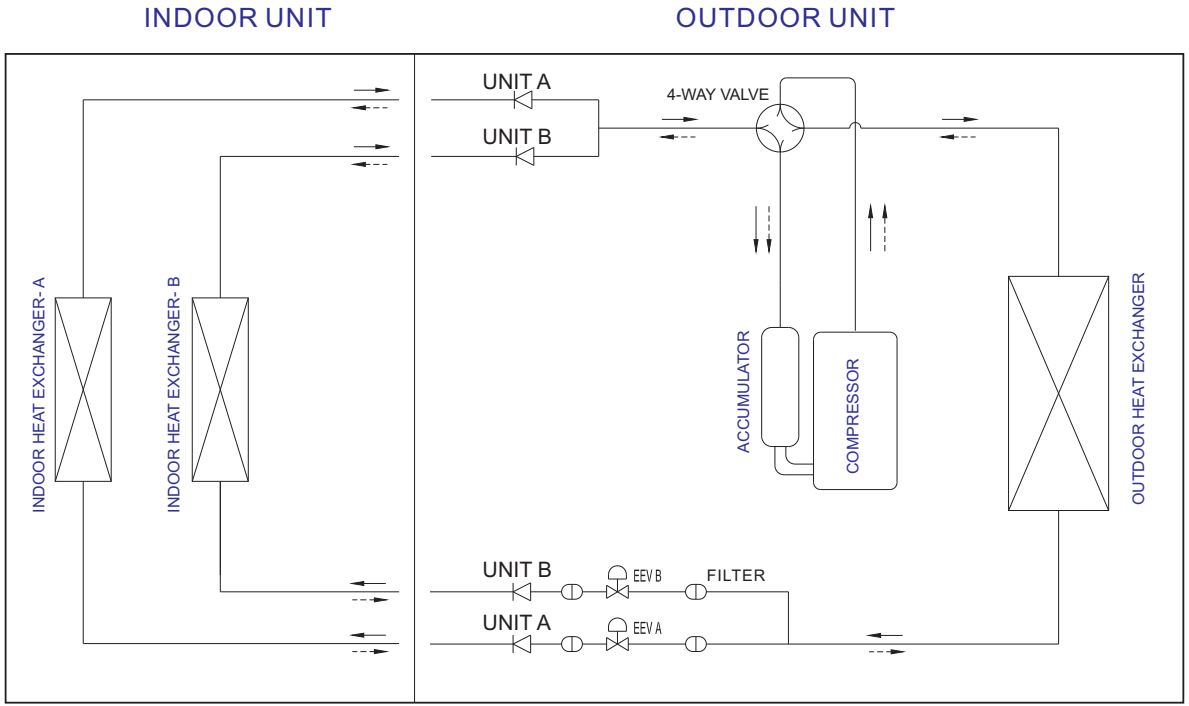
1.PURGING PROCEDURES

（1）Connect the refrigerant pipes(both liquid pipe and gas pipe) between the indoor unit and the outdoor unit.
（2）Remove the service port cap of the stop valve on the gas pipe side of the outdoor unit. (The stop valve will not work in it initial state fresh out of the factory [totally closed with cap on].)
（3）Connect the gauge manifold valve and vacuum pump to the service port of the stop valve on the gas pipe side of the outdoor unit
（4）Run the vacuum pump. Vacuumize for more than 15 minutes.
（5）Check the vacuum with the gauge manifold valve, then close the gauge manifold valve and stop the vacuum cap.
（6）Leave it as is for one or two minutes. Make sure the pointer of the gauge manifold valve remains in the same position. Confirm that the pressure gauge shows -0.101MPa or -760mHg .
（7）Remove the gauge manifold valve quickly from the service port of the stop valve.
（8）After refrigerant pipes are connected and evacuated, fully open all stop valves on both sides of gas pipe and liquid pipe.
（9）Pipe length up to 15m, no gas charge is needed.
Pipe length exceeding 15m,charge the prescribed amount of gas.
（10）Tighten the cap to the service port to obtain the initial status.
（11）Retigten the cap.
（12）Leak test.

NOTE:
Each set of pipes must be purged individually.


Compound pressure gauge(for R410A)
-0.101MPa (-760 mmHg)
Pressure gauge (for R410A)
Gauge manifould Valve(for R410A)
Handle Low
Handle High
Charge hose (for R410A)
Window
(Or the vacuum pump with the function to prevent the back flow)
Adapter for preventing the back flow

6. REFRIGERANT FLOW DIAGRAM



Cooling cycle

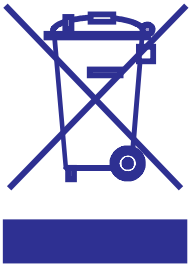
Heating cycle

PACKING LIST

Outdoor unit

No.	NAME	AMOUNT
1.	OUTDOOR UNIT	1
2.	DRAINAGE ELBOW *	1
3.	MANUAL	1

THE SYMBOL "*" STANDS FOR THE PART TO BE PICKED AND MADE PURCHASE.



Correct Disposal of this product

This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling.

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